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## CONTENTS

Research in Pedodontics
John C. Brauer ..... 66

Questions About School and Dental Health Problems
LaVeta Lehn ..... 71

Essentials for an Effective Community Dental Program
F. C. Cady ..... 75

Dental Preparation of the Child Patient for Adenotonsillectomy
S. M. Kozol ..... 77

Cavity Preparation for the Primary Teeth
Ralph L. Ireland ..... 80

The Use of Ammoniacal Silver Nitrate in Deep Seated Cavities in Primary Molars
Carl L. Sibelius ..... 83

News and Views ..... 88
The President's Message—The Secretary's Message—Report of the State Units

Development of Local Units the Ultimate Goal of A.S.D.C.
John Oppie McCall ..... 91

Foundation Teeth: Reply to a Report
Joseph H. Kauffmann ..... 92

Contract Dentistry
Walter C. McBride ..... 95

# RESEARCH IN PEDODONTICS

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The science of pedodontics has for its aims and objectives the guidance of the primary and young permanent dentition in growth and development as well as the preservation of the functional integrity of the teeth and surrounding structures. One not only must have knowledge concerning restorations, treatments, and general therapy but basic understanding of the fundamental sciences as related to medicine and dentistry in the diagnosis and prognosis of the individual patient.

Research in various fields has contributed much to the knowledge of the practice of pedodontics. The question concerning the cause and control of dental caries has been and is one of the most popular research projects in this and other countries. A review of the book *Dental Caries*[1] presents evidence that opinions and findings are not in agreement. However, much has been accomplished, and certain information can be used to help in the control of this most prevalent disease.

The contributions of Schour and Massler[2] and Logan and Kronfeld[3] have tended to revise opinions and thoughts concerning the calcification and development of teeth and the problems incident to the child patient. Medical-dental research in a number of institutions has a direct bearing upon the daily practice of dentistry for children. Research in orthodontics, nutrition, and sciences interested in growth and development of the oral structures and the body in general also are important in relation to diagnosis and treatment of the child patient.

Pedodontics cannot possibly be separated completely from any other branch of dentistry in theory, practice, or research; yet there are many problems related to the growing individual not common to the adult patient.

Dentistry for children offers vast opportunities for research since there are multiple problems in practice and technics that need supporting data and confirmation. Literature permits expressions and opinions of many writers without adequate data to substantiate their conclusions. A practitioner, institutional worker, administrator, student, or teacher may have followed a technic for a long period of years; yet he may not have his data organized so that such can be submitted for review by others.

Generally speaking individuals associated with institutions have greater opportunities for research since there are a larger number of patients, and in most instances the children are clinic patients for a number of years or can be recalled at regular intervals. It is easier and more practical to get a sufficient sample in the experimental and control groups in clinics such as

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Guggenheim, Forsyth, and Rochester than in most private practices. The departments of pedodontics in the various schools of dentistry also have unusual opportunities as do state departments of health to develop and collect certain types of data from records over a period of years. This situation certainly does not preclude the possibility of the general practitioner or pedodontist doing and completing valuable research work. This practitioner can keep as accurate records and come to certain definite conclusions providing he has an adequate sampling of cases for the particular problem.

Conclusions should pertain only to the question or observations actually reviewed. An example would be as follows: The question arises whether a cement base is necessary under all amalgam fillings, regardless of the depth of cavity, to maintain the vitality and comfort of the primary tooth. In this research problem one would have to set up certain standards and definitions as related to depth of cavity, toilet of cavity, amalgam employed, method of packing, criterion in determining vitality of the tooth, length of observation, and number in the control and experimental groups. One would certainly have to evaluate a comparable number of teeth with amalgam fillings without cement bases before one could conclude that all amalgam fillings regardless of depth of cavity need a cement base to maintain comfort and vitality. The question of adequacy of data is all important, and in this instance a minimum of twenty-five patients in the control and twenty-five in the experimental group might be significant. It would be far more conclusive, however, if one had at least 100 patients in each group who had been observed over the prescribed period of time and under given conditions.

There are comparable problems in the various technics of root canal therapy. There are many questions that need an answer, such as: Do the roots of the primary teeth resorb faster, slower, or at practically the same rate as those of an untreated vital tooth? What root canal technic in the primary teeth best preserves the integrity of the arch with reference to root resorption and functional and occlusal adaptation to the permanent dentition? Has there been sufficient proof to make the statement that pulp capping is impractical and not a justifiable procedure in any case of exposure of the pulp in a vital primary tooth?

Some excellent work has been done in the field of primary tooth pulp therapy by Easlick[4] and others, but in each instance even more supporting data and information are needed to completely realize the limitations. The important point is that serial records of the same patients have been kept and are being obtained to justify the particular treatments. Results are more significant if several individuals from different institutions or offices can report the same conclusions when employing the same technic.

Another most interesting and worthwhile problem from a diagnostic point of view is that of determining the variations in calcification and eruption ages in terms of chronological age. Schour and Massler, Logan and Kronfeld, have given the profession the averages in charts and tables. How-

ever, it is a well known fact that the metabolic efficiency of all children is not within the realm of average, and one may anticipate a number of patients with considerable variations in the three cited age levels. The writer has considerable unpublished data on this particular question. Others interested in the field of growth and development as well as the making of a differential diagnosis in dentistry for children would find this a challenging research project.

Considerable discussion has also been introduced in the literature on the question: Is it practical to employ function in a space maintainer supplying a primary molar? Since the primary dentition is used in the process of chewing and there is an occlusal surface for this function, is it necessary, advisable, or practical to restore this lost factor in the event of an early extraction? Do the roots of the primary teeth that support such a functional space maintainer resorb faster, slower, or at practically the same rate as the teeth that are fixed to a nonfunctional restoration? How do these resorption rates compare with teeth that have no attachments? Does one anticipate more lateral development in the incisors of the primary dentition by using a movable joint on the anterior or posterior attachment of a first primary molar space maintainer? What evidence is there that one does not need a second primary molar space maintainer with a distal shoe to guide the first permanent molar in the event of an early extraction at the age of three or four or five years or older? These and many other points need clarification through study, records, models, and reports with reference to the use and types of space maintainers.

The study of the incidence and increment of dental caries at the various age levels in different sections of the country would be most helpful to public health programs now in progress and even more helpful to any state or national preventive or restorative program that might be contemplated. Some very acceptable data has been presented such as the Hagerstown, Md., Study which is of school age children. Many other studies have also been conducted; all of which have been helpful and interesting. Too little information has been obtained about the preschool age child, and it is this group which will require and which will receive major consideration in any preventive program for indigent patients.

There have been many definitions as to what constitutes an adequate examination. It would certainly be most helpful if the majority of the institutions and public health workers interested could and would define the type of data which is to be collected as well as set up certain criteria or standards which would be essential in the making of an examination. Several writers including Bodecker,[5] East,[6] Klein,[7] and Knutson[8] have presented the type of information which will permit an analysis of their data with that of others. One of the finest contributions that could be made to dentistry would be the development of an examination chart that would be acceptable to the American Association of Public Health Dentists, the American Society of

Dentistry for Children, and those interested in the collection of data with reference to the child patient. Further, all interested groups should agree on suitable definitions and criteria in the making of an examination so that a reasonable uniformity would permit the analysis of another's data. An examination sheet such as Figure 1 (Page 70) might be employed, and it is adaptable to the punch card system for statistical analysis. One may note that this record can be used to obtain information on the same patient over an extended period of time. Therefore, it is used in the development of longitudinal data which is most significant in the study of the increment of dental caries. No doubt some individuals would find it impractical to obtain records on the same patient over a period of years, and in this instance these numbers (74-80) could be employed for other information such as in a cross-sectional examination. Possibly number 72 with reference to the extent and activity of dental caries would be too difficult to define so that another factor could be incorporated if desired.

The writer has cited only a few of the multiple possibilities in the field of research in pedodontics. That dentistry for children varies considerably from dentistry for adults in methods of practice needs no proof. All will agree that there are many common technics and procedures in cavity preparation; yet the critical observer realizes that within the child patient there are many physiological laws and sequences not common to the adult patient. Further, the necessity for individual interpretation and differentiation is highly important in the growing child if one anticipates professional and financial success.

## CONCLUSIONS

1. The science of pedodontics cannot possibly be separated from any other branch of dentistry in theory, practice, or research. However, there are multiple problems related to the growing child not common to the adult patient.

2. Opportunities for research in pedodontics are many with reference to cavity preparation, pulp therapy, determination of calcification and eruption ages in terms of chronological age, space maintenance, and the increment of dental caries at the various age levels.

3. A dental record should be developed acceptable to those interested in research, accompanied by definitions and criteria incident to the making of an adequate examination.

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Figure 1

SCHOOL OF DENTISTRY—UNIVERSITY OF IOWA

**DENTAL EXAMINATION DATA**

Name of Patient.....Date.....

Patient Serial Number: 1 to 4:

..... 7: Lower R. Second Dec. Molar
..... 8: L.R. First Dec. Molar
..... 9: L.R. Dec. Cuspid
.....10: L.R. Dec. Lateral
.....11: L.R. Dec. Central
.....12: L.L. Dec. Central
.....13: L.L. Dec. Lateral
.....14: L.L. Dec. Cuspid
.....15: L.L. First Dec. Molar
.....16: L.L. Sec. Dec. Molar
.....17: U.L. Sec. Dec. Molar
.....18: U.L. First Dec. Molar
.....19: U.L. Dec. Cuspid
.....20: U.L. Dec. Lateral
.....21: U.L. Dec. Central
.....22: U.R. Dec. Central
.....23: U.R. Dec. Lateral
.....24: U.R. Dec. Cuspid
.....25: U.R. Dec. First Molar
.....26: U.R. Dec. Sec. Molar
.....27: Lower R. Sec. Perm. Molar
.....28: L.R. First Perm. Molar
.....29: L.R. Sec. Bicuspid
.....30: L.R. First Bicuspid

No. of Visit: 5 to 6:

.....31: L.R. Perm. Cuspid
.....32: L.R. Perm. Lateral
.....33: L.R. Perm. Central
.....34: L.L. Perm. Central
.....35: L.L. Perm. Lateral
.....36: L.L. Perm. Cuspid
.....37: L.L. First Bicuspid
.....38: L.L. Sec. Bicuspid
.....39: L.L. First Perm. Molar
.....40: L.L. Sec. Perm. Molar
.....41: U.L. Sec. Perm. Molar
.....42: U.L. First Perm. Molar
.....43: U.L. Sec. Bicuspid
.....44: U.L. First Bicuspid
.....45: U.L. Perm. Cuspid
.....46: U.L. Perm. Lateral
.....47.: U.L. Perm. Central
.....48: U.R. Perm. Central
.....49: U.R. Perm. Lateral
.....50: U.R. Perm. Cuspid
.....51: U.R. First Bicuspid
.....52: U.R. Sec. Bicuspid
.....53: U.R. First Perm. Molar
.....54: U.R. Sec. Perm. Molar

.....556-56: Number of extractions necessary at this time.
.....57-58: Number of Decidous teeth present. 58—Mouth Hygiend: X—Good Y—Poor
.....59-60: Number of Permanent teeth present.
.....61: Number of therapeutic extractions ( past). (Indicate number.) X—Calculus present. Y—Calculus absent.
.....62: Type of occlusion (1 to 4): 5—Stains: 6—Serumal Calculus 7—Salivary Calculus: 8—Hyperemia.
.....63: Condition of gingivae.
.....64: Enamel caries (surfaces). Charted only if on buccal or lingual with loose enamel rods.
.....65-66: Total D.M.F. surface. Number of cavities, fillings, or extractions. Shall count three surfaces for an extraction or necessary extraction. Not to include the pits or fissures in this count (A's and B's).
.....67-68: Total D.M.F. Teeth: (Cavities, fillings, or extractions).

.....69-70: Number of tooth surfaces involved with dental caries.
.....71: Number of open cavities. (May have two on one surface.)
.....72: Extent of caries, whole mouth. (0-1-2-3-4.)
Activity of caries. (5—none, 6-7-8-9—maximal.)
.....73: Age.
.....74-76: Month and year of earliest observation in this clinic.
.....77-78: Number of times observed in this clinic.
.....79-80: Interval in months since initial observation.

KEY TO EXAMINATION

Y: Occlusal or tooth present
X: Buccal or tooth missing
O: Lingual or unerrupted
1: Mesial
2: Distal
3: Extracted tooth
4: Extraction necessary
5: Closed space
6: Acceptable filling
7: Leaky filling
8: Caries active
9: Caries inactive

# QUESTIONS ABOUT SCHOOL AND DENTAL HEALTH PROBLEMS

*By* LaVeta Lehn

**1. What relationship exists between dental health and care and school attendance?**

Studies made by the United States Public Health Service lists "toothache and diseases of the teeth" among the 10 most important causes of school days lost through absence, and states that 178 school days per 1,000 children per school year was found to be the amount of time thus lost.[1,2] Cotton quotes from the Bulletin of the Department of Health, New York, January 1, 1921: "From the standpoint of school progress, carefully kept records have indicated toothache as one of the most frequent causes of absence from school."[3] Other studies reveal that toothache caused absence from school varying from 0.5 per cent[4] to 5.0 per cent of the total days lost.[5]

In a survey conducted by Hamlin, it is stated that in Boston attendance increased 2.8 per cent after a thorough-going dental program was put into effect.[6] Matthews and Kinsella name as one of the results of a school dental clinic, better attendance.[7]

1. Otto, H. J. What does research say? Bulletin No. 308. Lansing, State of Mich., Dept. of Public Instruction, 1937. 146 p. (p. 99-107).
2. Wood, T. D. Health education, a program for public schools and teacher training institutions. Report of the Joint Committee on Health Problems in Education of the N.E.A. and the A.M.A., Washington, D. C., U. S. Office of Education, 1930. 251 p. (p. 23-5).
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7. Matthews, G. E., and Kinsella, B. W. A school dental clinic. J. Am. Educ. A., 28:242-3, Nov. 1939.

**2. What relationship exists between dental health and scholastic standing?**

There is general agreement in the literature, of those who have studied

or observed conditions, that when children have had serious dental defects corrected, their scholastic standing has improved. Mallory made a very careful, statistical study and came to the following conclusions: "Physical defects are directly associated with low scores. Physical defects constitute 'a' cause of retardation. It has been shown that retardation constitutes a cause of backwardness in achievement.

"All defects do not constitute handicaps to progress to the same degree. In this respect they should probably be ranked in the following order: nasal obstruction and mouth breathing with which it is accompanied, defective teeth and the resulting maladies, defective hearing, defective tonsils, and defective eyes, which includes both defective eyes and defective vision."[1]

Wallin[2] was unable to measure accurately the scholastic improvement attributable to dental corrections in his study due to the fact that he had no control group. However, the scores at the end of the year were 57 per cent higher than pre-treatment scores. He had no way to determine how much of this improvement should be ascribed to the factors of familiarity, practice, and increased maturity.

Johnson quotes this statement made by the Board of Education of New York City: "that 80 per cent of the failures (of children to make their school grades) are due to physical handicaps, and that most of these are connected with the mouth and teeth."[3] Cohen,[4] Fones,[5] Fixott,[6] Barr,[7] Hamlin,[8] and Matthews and Kinsella,[9] report improved scholastic records when the dental health of the school children has been improved.

1. Mallory, J. N. A study of the relation of some physical defects to achievement in the elementary school. Nashville, Tenn., Geo. Peabody College for Teachers, 1922. 78 p. (p. 75).
2. Wallin, J. E. W. Education of handicapped children. Cambridge, Riverside Press, 1924. viii + 394 p. (p. 84-5).
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### 3. At what age should the child begin to have regular dental inspection and care?

The child should be taken to the dentist when the twenty primary teeth are all in place or at about two and one-half years of age. Many children of this age have been found to have cavities.

Drenckhahn, V. V., and Taylor, C. R., with the assistance and approval of the Committee on Dental Health Education of the A.D.A. Your child's teeth. Chicago, Bureau of Public Relations, A.D.A., 1940, 40 p. (p. 33).

Gardner, T. A. Ten important points in public health dentistry. Mimeographed article. Nebr. (State) Dept. of Health.

Strusser, H. W. The school child. Washington Univ. D. J., 3:62-6, Nov. 1936. (p. 63.)

**4. How may the young child be favorably conditioned for his first visit to the dentist's office?**

"Pre-appointment education:

Many a pleasant and profitable appointment with a small child is lost before the patient gets to the dental office.

1. Parents can be educated to bring children to the office early before a painful emergency has to be treated.

2. Parents can be educated, likewise, to build up a child's anticipation to the point where he expects a new and interesting experience with a friendly dental health counselor, instead of a battle with an ogre in a white coat."

Michigan Department of Health, Bureau of Public Health, Dentistry and the Postgraduate Division, School of Dentistry, University of Michigan. Accepted technics in children's dentistry. Mich. State Dept. of Health, Lansing, 1939. 42 p. (p. 3).

Dentistry should be looked upon calmly as a common experience, not as an ordeal. Dubious parents need to be reassured when they make appointments for their children since children naturally follow the conduct pattern of their parents.

Sweet, C. A. Children's dentistry. J. 2nd Dist. D. Soc. (N. Y.), 25:167-77, Dec. 1940.

Young children may accompany other members of the family on visits to the dentist in order to become acquainted with the dental office and personnel.

Schure, Joseph. Controlling child behavior in the dental office. D. Outlook, 26:221-4, 240, May 1939.

**5. How may souvenirs serve to establish better relations between the dentist and his young patients?**

Souvenirs help to elicit interest and waylay fears so that the child will regard the dentist as a friend and the dental office as an attractive place. The gift of a souvenir makes it possible to dismiss the child and conclude the visit in a way that is pleasing to him.

Easlick, K. A. Operative dentistry and the three-year-old patient. J. 2nd Dist. D. Soc. (N. Y.), 25:495-502, May 1940.

Pelton, W. J. Souvenirs for Children. Rev. Den. for Children, 6:23-4, Feb. 1935.

**6. Has increased dental caries been shown to follow the sale of candy in the school?**

Yes. T. J. Pyle, dental supervisor of Alaska, found that dental caries increased 600 per cent in one year after the sale of candy had been introduced in the bureau boarding school at Eklutna. The living conditions of these children were the same during this year except for their higher sugar diet.

Michigan Department of Health. The eskimo, sweets and tooth decay. J. Mich. State D. Soc., 23:247-51, Oct. 1941.

**7. Is the sale of candy in the school justified?**

The sale of candy in the school is not justified. "Candy supplies chiefly calories and sweet flavor and is a nonessential. The regular use of food containing such a high concentration of sugar is also an important factor in the appalling incidence of dental caries among school children."

Koehne, Martha. The functioning school lunch. Am. J. Pub. Health, 32:369-73, Apr. 1942 (p. 372-3).

**8. What should be the policy of the school toward absences for dental appointments?**

The Oklahoma City public schools have accepted the following rules and regulations toward absences for health appointments:

(a) That all school children needing the services of a doctor should be encouraged to secure the service.

(b) That an absence of less than one-half day should not be recorded where an appointment for treatment has been kept.

(c) That absence due to illness or to keeping appointments with doctors should receive no penalty.

(d) That written requests from the parent be presented to the school:

1. When the child wishes to leave the building to keep an appointment for medical service.
2. When the child has been to see the doctor before coming to school and wishes to return to class.

(e) That attendance awards should be discontinued.

Similar policies should be adopted in all schools.

Editorial, Progress report on professional services for school children. Am. J. Orthodont. & Oral Surg., 27:725-8, Dec. 1941.

"Disposition of Bills Introduced Affecting Dentistry."

"1148 Absence of secondary pupils from schools for dental services. Signed by Governor, May 13, 1941.

"(Two years ago a bill was enacted into law permitting primary school children to attend dental offices without being counted as absent from school. The present bill grants the same privilege to pupils of secondary schools.)"

Legislative Committee. Annual Committee Reports. J. South. Calif. D. A., 8:20, Aug. 1941.

**9. What is the responsibility of the school in the case of accidents occurring at school?**

When accidents occur at school, it is the responsibility of the school to (1) administer first aid, (2) notify the parents, (3) see that the child receives transportation to the home, the doctor's office, or to the hospital of choice, and when necessary (4) direct the family to sources of further treatment.

American Medical Association. Suggested school health policies. Reprint from Hygeia. The Health Magazine, Sept., Oct., and Nov., 1940.

**10. Is chewing gum beneficial to the teeth and gums?**

"The value of chewing gum as a dental aid has not been scientifically established."

Drenckhahn, V. V., and Taylor, C. R., with the assistance and approval of the Committee on Dental Health Education of the A.D.A. Your child's teeth. Chicago, Bureau of Public Relations, A.D.A., 1940. 40 p. (p. 34).

"Fleers Dubble Bubble Chewing Gum.—This was advertised under such claims as that it was rich in dextrose and that the dextrose content would help relieve fatigue, give 'pep,' animation or energy, increase vitality in men, women and children and be a competent aid or treatment for a great variety of oral disorders or dental diseases, such as gingivitis, Vincent's infection and pyorrhea, and do some other things. In October 1940 the Federal Trade Commission reported that the Frank H. Fleer Corporation of Philadelphia, which puts out this gum, had signed a stipulation agreeing to discontinue these and other misrepresentations."

Abrams, Albert. Bureau of Investigation. J.A.M.A., 117:1281, Oct. 11, 1941.

Nebraska State Department of Health,
Lincoln, Nebr.

## Essentials for an Effective Community Dental Health Program

F. C. Cady, D.D.S., M.P.H.

A number of carefully controlled studies conducted in recent years have shown that early and periodic treatment will materially reduce tooth loss in the individual, and that an effective community dental health program will, over a period of years, show a substantial decrease in the percentage of lost permanent teeth per hundred children.

Fundamentally then, the objective of a public dental health program is the prevention of tooth loss on a community basis. In principle, the approach is similar to that used in programs for the control of cancer and venereal diseases, or the reduction of deaths from communicable diseases.

Only recently, however, have dental health officers scrutinized their various projects to determine to what degree they are contributing to the main objective.

In the past, the prevailing weakness of a large number of community dental programs has been the failure to organize them on a basis where tangible results can be measured with any degree of accuracy. Even those programs, which on the surface appear to be effective, have rarely been subjected to sound statistical treatment to determine which of the promotional projects employed are responsible for results and which are mere window dressing. That there has been lost motion and waste of time and money has frequently been demonstrated when a few of the various devices employed have been subjected to the acid test of analysis.

Many community dental programs have been handicapped by insufficient funds. Civic, school, and health officials have been reluctant to appropriate funds in proportion to the size and seriousness of the dental problem. To a large extent, this reluctance is due to the fact that the dental program

has failed to show returns on the investment comparable to those made in many other fields of public health. It is questionable if the situation will show much improvement until dental health officers can demonstrate returns in terms of reduced percentages of lost permanent teeth.

In too many instances, programs with little money and few personnel spread over too much territory and attempt to provide some service to too many people. One of the projects favored is wholesale examination of school children. Another is widespread distribution of dental health literature. When carefully analyzed, it is doubtful if such time-consuming and expensive measures will, single-handed, prevent much tooth loss. Generally little effort is expended to determine how much these devices contribute to the major objective. Too often these and other measures, such as motion pictures, exhibits, dental health talks, and the like, are considered the end results, when actually they are merely priming devices which require definite follow-up work, if their value is not to be wasted. It must be remembered that there is a wide gap between these demonstrations and the actual correction of dental defects, which in too many instances is never bridged.

A number of reports have been published from which specific information can be obtained on the evaluation of a dental program. A recent report made by Knutson[1] on studies and demonstrations conducted in Minnesota is outstanding. In this report, Knutson states that, "The principal objective of a dental program can be simply stated as the formulation and application of procedures whereby the early detection and treatment of carious teeth are accomplished and tooth loss thereby prevented . . . The causes for the more or less universal failure of dental programs are probably exceedingly numerous . . . four of what appear to be major causes . . . are 1—Lack of conviction that the objective can be obtained; 2—Failure to recognize the limitations of health eduction; 3—Lack of local full-time personnel to do the general field work and to supply adequate follow-up service; 4—Lack of objective evidence that the program in general and the cooperative effort in particular are having the desired results." In his county-wide programs in Minnesota, Knutson is supplying the objective evidence by a system where the resident dentists report tooth loss patterned after the tried and effective method by which physicians report deaths and communicable diseases. The method is simple, accurate, and furnishes the evidence from which the dental programs in these communities can be measured.

There is little doubt that funds to promote the official health services are forthcoming, largely because health officers can present to appropriating bodies statistical evidence showing that death and communicable disease rates have over periods of years been reduced.

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U.S.P.H.S. Hospital
Lexington, Kentucky.

# DENTAL PREPARATION OF THE CHILD PATIENT FOR ADENOTONSILLECTOMY

S. M. Kozol, D.D.S., Boston, Mass.

The onset and progress of dental caries and its manifestations of oral sepsis are present in varying degrees in children of all ages. The bacteria in a child's mouth, especially the pyogenic group, under circumstances favorable to their development, undergo changes in virulence and may go on to establish serious secondary foci of infection. Caries, therefore, in addition to destroying tooth structure may distribute pathogenic organisms to the mouth and throat.

Thus, the bacilli of diphtheria and the streptococci and mixed organisms of scarlet fever and other contagious diseases are found not only in carious teeth but in the oral tissues and in infected adenotonsillar structures as well. Meader,[1] in a study of 141 patients with definitely proven infections of the teeth, commented on the high incidence of related acute respiratory tract diseases in their histories. Kaiser[2], also, reported findings based on a detailed study of the effect of tonsillectomy on 5,000 school children and pointed out that chronic prolonged pre-operative and postoperative cervical adenitis may bear a distinct relationship to disease of the teeth.

Today, routine adenotonsillectomy for children is a thing of the past. Physicians are devoted to the admirable principle that, wherever and whenever possible, the integrity of the human body should be preserved. They are concerned with the important relation that lymphoid tissue may bear to control of the common cold and various other infections with systemic manifestations. Still an impressive number of child patients present clinically such morbidities of the adenotonsillar structures, together with other pertinent and specific data in their medical histories, as to indicate the surgical removal of the tonsils, the adenoids, or both.

During the year 1940-1941, two hundred of such children who were operated at the Boston Dispensary were given complete pre-operative dental treatment. Over 50% were in the five to seven year age group. This age group is particularly noteworthy for, as Maccoll[3] points out, it is at this period that most children first come to the attention of the school physician, the dentist, the nurse and the teacher.

While it is commonly felt that dental treatment at this age may be more difficult psychologically as well as physically the dentist's responsibility to these children is none the less clearcut. His immediate duty is the systematic elimination of all possible foci of infection in the oral cavity. This procedure includes all radiographic, prophylactic, surgical, periodontic, restorative and protective measures in keeping with an approved plan for diagnostic procedure and effective treatment. By such means the dentist will present the child to the surgeon laryngologist with a clean bill of dental

health and will eliminate dental disturbances as a factor in the production of possible secondary infections.

The procedure, as outlined, is set forth merely as a suggested sequence. From it the operator may deviate whenever the individual case indicates such a change or modification in treatment technic is desirable.

It is advisable at the outset to gather and study as complete a health history of the patient as is possible. Conferences with the physician may be advantageous. Added information gained from both the child and the parents may be of significant value. Note particularly those medical factors which ordinarily influence the dental structures such as lues, diabetes, epilepsy, and tuberculosis. Also give special thought to cardiac patients and to those with blood dyscrasias and deficiency diseases. These patients may require special treatment, and medical collaboration.

Whenever it is practical, radiograms should be taken. They are every bit as important for the child patient as for the adult. With this advantageous supplement, the child's dental condition can be more completely studied and the dental plan of treatment graphically illustrated to the medical consultant. The radiogram may bring to light periapical involvements, retained root fragments, radicular and traumatic cysts, congenital defects, foreign and supernumerary bodies as well as sinus and other contiguous tissue involvements.

As a matter of routine, the first specific dental operation should consist of a general dental prophylaxis. The need for such prophylactic measures at the outset need not be defended here. They are based upon accepted principles of aseptic technic. Certainly in children's mouths where bacterial invasion may progress to secondary foci with devastating rapidity, the importance of early prophylactic routine cannot be over stressed.

Many of the young candidates for adenotonsillectomy present past or present histories of specific deficiency disease. In such cases local treatment of the weakened oral tissues is often a necessary supplement to general systemic medication. In fact close attention to the mucous membranes beforehand may aid in the early discovery of a systemic disease. This practice is preventive medicine in the true sense of the word.

After such preparation acute infections of the teeth, roots, and oral mucosa may be treated by extraction, incision, drainage, medication or whatever forms of therapy that are indicated. Refusal to inject into an infected area should be a cardinal principle of procedure. Acute infections such as sub-periosteal abcesses are already so painful that they may be incised and drained with speed and facility by employing only the most superficial of anesthetics, or frequently none at all. With drainage once established, the mouth may be kept clean with intermittant rinses of Dakin's or warm sterile physiological salt solution.

With the elimination of acutely involved dental areas radiograms may indicate further involvements of permanent teeth as well as primary roots,

cysts, odontomas and other more or less hazardous bodies which come within the scope of dental treatment.

All teeth and roots indicated for extraction should be removed. Whenever the extraction of teeth in children is contemplated, growth and developmental processes and the orthodontist's point of view should be considered. The forms of the dental arches and the arrangement of the teeth are orthodontic problems which may have a direct relationship to the morbidity of existing adenotonsillar structures. Pulp infected primary teeth should be removed. The dentist of today is capable of constructing modern scientifically designed space maintainers.

In this respect it is felt by the writer that a word might be said about leaving certain innocent looking roots or fragments as "space maintainers" in children's mouths. This topic was discussed recently at a round table conference of the Massachusetts Society of Dentistry for Children. This discussion brought out the conclusion that such procedure is the result of wishful thinking not of prudent judgment and scientific reasoning. The evidence against leaving roots is so overwhelming as to make their extraction a cardinal principle of pedodontic practice.

Loose primary teeth are a serious hazard in adenotonsillectomy. During the operation the most careful surgeon may inadvertently dislodge one. The subsequent problem in the recovery of the tooth from the lung or the nasopharynx is an unpleasant one.

The treatment and filling of restorable carious areas in teeth are common problems of operative dental procedure and the technics are taught admirably today in dental schools. From a practical viewpoint, the operating surgeon in adenotonsillectomy is interested in "good fillings that stay in." A piece of amalgam or cement dislodged may be as dangerous as a loose tooth.

Perhaps there has been some lack of emphasis in the past of Black's classical principles of cavity preparation as they apply to the primary teeth. These teeth are anatomically different in some important respects from the permanent teeth. Yet, by the construction of outline and retentive forms of cavities in posterior primary teeth according to the operative principles set down by approved pedodontic groups and by exact adherence to correct manipulation and insertion of the filling materials, serviceable dental restorations will result.

When the primary or permanent teeth in a child become loosened by accident, careful treatment may serve to maintain the integrity and vitality of these teeth without subsequent infection. Where the resorptive processes are not excessive, the prognosis for retention of the affected teeth is generally good. Splints may be quickly and easily constructed. Whatever appliance is selected, it should be strong, compact and firmly fixed in order not to constitute a hazard to the operating surgeon in the course of the adenotonsillectomy. With such patients the dentist should attend the

operation and be prepared for emergency dental work as well as whatever assistance that may be demanded of him at the time. There are many instances in which surgeons insist that a dentist be present at the operation, a tribute to the important cooperative role that dentistry has come to assume in general health practice for the child.

Adequate dental preparation of the child patient for adenotonsillectomy is a challenge to the proper psychologic handling, scientific diagnostic ability, technical skill and comprehensive understanding of the attendant dentist.

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9 Newbury Street, Boston, Mass.

# CAVITY PREPARATION FOR THE PRIMARY TEETH

Ralph L. Ireland, B.S., D.D.S.*

**I. Areas in the Primary Teeth Most Susceptible to Decay**

(a) Distal surfaces of the first primary molars.
(b) Mesial surfaces of the second primary molars.
(c) Pits and fissures in the occlusal surfaces of the primary molars.
(d) Proximal surfaces of the upper central and later incisors.

**II. Precautions which will Lessen Pain in Cavity Preparation.**

(a) Reduce the speed of the engine.
(b) The speed of the engine should be uniform.
(c) Use sharp burs and instruments.
(d) Use a true running hand piece.
(e) Work in as dry a field as possible.

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**III. Differences between the Primary teeth and the Permanent teeth.**

Cavity preparation for the primary teeth is fundamentally the same as that employed for the permanent teeth. There are, however, certain structural differences between the first and second dentitions which make it necessary to change our cavity preparation for the primary teeth in order to conform to these variations. The more important differences between the primary and permanent teeth which make these changes necessary follow:

(a) The pulps of the primary teeth are much larger in comparison to the size of the crowns than in the permanent teeth.

(b) The pulpal horns extend closer to the outer surface of the primary teeth. The mesial pulpal horns of the molar extend closer to the outer surface than the distal pulpal horns.

(c) The thickness of the dentin surrounding the pulps of the primary teeth is approximately one-half that found in the permanent teeth.

(d) The same is true of the amount of enamel, which is about one-half as thick in the primary teeth as that of the permanent teeth.

(e) The enamel rods in the gingival third of the crowns of the primary teeth do not run in the same direction as those in the permanent teeth. Instead of running in an apical direction as they do in the permanent teeth, the rods are inclined toward the occlusal or incisal surfaces.

**IV. Cavity Preparations for the Anterior Teeth.**

(a) Class Three Cavities in the primary teeth are prepared in a similar manner to that employed for the permanent teeth, with the exception that the preparation is not as deep and point angle instruments are not used. Class three cavities in the primary teeth can be filled with silver amalgam or silicate. It is just as important that esthetics be considered when filling cavities in the anterior teeth of children as it is when restorations are placed in the anterior teeth of adults. It is possible that unsightly, discolored and crooked anterior teeth have been responsible for the development of inferiority complexes in children.

1. For class three cavities in the distals of cuspids a proximal preparation and a lingual dovetail is recommended. Silver amalgam is used for the filling material in order that a permanent contact between the cuspid and first primary molar can be maintained. A matrix that completely encircles the tooth is used, and the silver amalgam is placed and condensed from the lingual. A tinner's joint type of matrix or a soldered pinch band are suitable.

(b) Class Four Cavities—Methods of Handling.

1. (a) Disk away the proximal enamel and dentin to the depth of decay. Do most of the cutting on the lingual when possible.
   (b) Smooth and polish with disks. Ammoniacal silver nitrate may be applied if necessary.
2. (a) Where caries has penetrated to any great depth, disk away the proximal enamel. Do not leave undermined enamel at the incisal.

(b) Remove remaining caries, prepare the cavity similar to a class three.
(c) Apply ammoniacal silver nitrate to any remaining hard discolored dentin.
(d) Polish and smooth enamel walls.
(e) Fill the cavity with silicate.

**V. Cavity Preparations for the Posterior Teeth.**

(a) Class one cavities.
1. Procedures.
(a) Open carious pit or fissure with No. 33½ or 34 inverted cone bur.
(b) Trace out all faulty grooves to sound enamel.
(c) Widen opening with a No. 557 cross cut fissure bar.
(d) Remove remaining decay with a No. 2, 3, or 5 round bur.
(e) Smooth enamel walls with tapering carborundum stone.

(b) Class two cavities.

The maxillary and mandibular second primary molars are more favorable for Class Two preparations than the maxillary or mandibular first molars. Due to the large mesial pulpal horns, mesial occlusal preparations are more difficult than distal occlusal preparations.

When the marginal ridge has not been destroyed by caries there are several methods to gain access, any one of which can be used successfully, depending upon the case.

These methods follow:

1. If sufficiently undermined, the marginal ridge can be broken down with chisels.
2. Enter the central pit with a No. 34 inverted cone bur or No. 557 cross cut fissure bur and make a cut to the proximal.
3. Using a No. 33½ or 34 inverted cone bur, place the bur in the mesial or distal pit as the case may be, and tilting the hand piece at a 45 degree angle undermine the marginal ridge. Break down the marginal ridge with chisels.

(c) The proximal preparation.
1. Widen embrasure and carry margins to a self-cleansing area on the buccal and lingual with a No. 557 fissure bur.
2. Prepare axial walls with No. 557 fissure bur. Do not go deeper pulpally than 1 mm. (width of a No. 557 fissure bur).
3. Using a No. ½ round bur a groove is made in the gingival at the gingivo-axial line angle. The retention groove is made parallel and not pulpally to the long axis of the tooth.
4. The gingival seat should not be flat, as in class two preparations for the permanent teeth, but should taper toward the incisal or occlusal. This will provide full length enamel rods.
5. The proximal gingival angles are rounded.

(d) The Occlusal Step Preparation.

1. Enter central pit with No. 34 inverted cone bur or No. 557 fissure bur and make a cut to the proximal preparation. This cut can also be made with a knife edge stone.
2. Widen this cut with No. 557 fissure bur or straight carborundum stone.
3. Prepare dovetail.
4. The outline of the occlusal preparations should meet the outline of the proximal preparation at, or as near right angles as possible. Buccal or lingual margins of the proximal preparation that flare out at sharp angles from the occlusal preparation do not allow for strong areas of amalgam. When caries extends far out on the buccal or lingual it is better to extend the cavity preparation around on the buccal or lingual surfaces and restore the cusp.
5. The pulpal-axial line angle should be rounded.

When approximating cavities are present between the two primary molars and both marginal ridges have been destroyed by caries, both cavities are prepared at the same time, thus reducing the operating time considerably. Go back and forth from one cavity to the other with the same instrument.

When, by means of radiograms, proximal cavities are discovered in the distal of the first primary molar and in the mesial of the second primary molar, a D.O. cavity should be prepared in the first molar and a proximal spot filling placed in the second molar. The proximal spot preparation can be made with a 33½ or No. 34 inverted cone bur. The cavity is filled with silver amalgam and this restoration should be polished before the D.O. cavity in the first molar is filled.

## The Use of Ammoniacal Silver Nitrate in Deep Seated Cavities in Primary Molars

By Carl L. Sebelius, D.D.S., M.P.H.

With the ever increasing interest in child health, and particularly the increasing realization among parents and dentists of the importance of dentistry for children, a review of the literature concerning the use of ammoniacal silver nitrate in deep seated cavities in primary teeth should be timely.

Before a discussion of the effectiveness of ammoniacal silver nitrate as a sterilizing agent for infected dentin in deep seated cavities, a brief discussion of the penetration of microorganisms in the tubules of the dentin and the reaction of ammoniacal silver nitrate in dentin, both infected and normal, seems proper.

### Caries in Dentin

Black[1] and Miller,[2] discussing the progress of caries in dentin, have stated that there is a softening of the dentin in advance of the actual growth of the microorganisms in the dentinal tubules. Kronfeld[3] says that Black and Miller's ideas are not entirely correct in that microorganisms do precede the decalcification of dentin. Zander,[4] however, believes that there is a microscopic difference in the course that caries may take in the dentin. He states: "In the acute stage, as is so often seen in children's mouths, we probably have a wide area of softened dentin, development of which precedes the actual invasion of the tubules by bacteria. In contrast, we have the chronic types of caries, usually found in older persons, in which invasion of the tubules is far in advance of the softening."

### The Chemical Reaction of Ammoniacal Silver Nitrate in Dentin

For more than a century, silversalts have been mentioned in connection with the control of dental caries. Miller,[2] one of the first to attack the problem of prevention of the progress of dental caries in the dentin by the application of silver nitrate, offered the following explanations as the possible action of silver nitrate on dentin: (1) the precipitate of metallic silver in the superficial layers of the dentin forms a barrier more or less impermeable to acids, and (2) the protective action of silver nitrate may be due to the coagulation of the contents of the dentinal tubules.

Prinz and Rickert[5] state: "Careful clinical observations have unquestionably proved that the thorough impregnation of the carious defect with silver nitrate checks the further progress of the disease." They further state that they believe the chemical process consists in the coagulation of the albumin and the formation of the albuminate of silver oxide.

### Effectiveness of Siver Nitrate Reduction

This question is often asked, "How effectively does ammoniacal silver nitrate sterilize dentin?" It may be answered by a review of the opinions and experiences of many dentists. Howe,[6] discussing the treatment with ammoniacal silevr nitrate, states that he believes that it can effectively sterilize the disintegrated dentin overlying pulps. The manual of clinical procedures at the Guggenheim Dental Clinic[7] has the following to say on this subject: "Since it has been shown that even hard dentin at the base of a cavity harbors 'pioneer' bacteria, the sterilization of this dentin after the removal of that softened by decay is necessary, especially when the cavity has penetrated nearly to the pulp. In the posterior teeth this sterilization is best accomplished by the use of ammoniacal silver nitrate, reduced with eugenol." Ireland[8] states: "Ammoniacal silver nitrate will penetrate to the base of the infected dentin left in the cavity, sterilize it and arrest further progress." He also states that it eliminates the necessity for the removal of all the infected dentin from the cavity thus reducing the possibility of pulp exposures.

The type of reducing agent used is also a factor that needs consideration. In a discussion of reducing agents Gordon and Shand[9] state: "Only two substances, formaldehyde and eugenol, have come into practical use as reductants in dentistry. In view of the large number of compounds which will reduce the silver, it is not improbable that some might be found that are more efficient than those in use. Formaldehyde under certain conditions produces undesirable irritation." Carrington[10] states that formalin used as a reducing agent in approximal cavities was found to be painful. Ireland[8] and Easlick[11] prefer the use of eugenol to formalin while Howe,[6] on the other hand, favors the use of formalin because its action is more prompt and allows for more penetration than eugenol.

### Depth of Penetration

The depth that ammoniacal silver nitrate will penetrate dentin is an important consideration. There seems to be a consensus of opinion that ammoniacal silver nitrate will not penetrate sound dentin due to the coagulation of the protoplasm in the tubules as soon as the silver nitrate comes in contact with it. Cleary[12] states that the action of silver nitrate on structures not invaded by bacteria is superficial because of the coagulation that takes place on contact of the chemical with the semiliquid protoplasm. On structures invaded by bacteria, he states that the chemical continues its penetration through the digested area regardless of the depth; as soon as the digested area is past and the protoplasmic structure is encountered, coagulation ensues and the action has ceased. Prinz,[5] reporting from the findings by Szabo, found that the penetration of the silver salts into the diseased dentin was limited to about one-fiftieth of an inch, and on sound dentin the penetration was very superficial.

Cohn,[13] on the other hand, showed the penetration of silver nitrate in one tooth from the pulp chamber through the dentin and periodental membrane and then into the alveolar process. This case was the only one in which silver nitrate penetrated sound dentin to an appreciable depth.

### Case Studies of the Use of Ammoniacal Silver Nitrate in Deep Seated Cavities

In a review of some of the recent studies of the use of ammoniacal silver nitrate in deep seated cavities, Easlick[11] reports: "In our children's clinic, since 1931, we have been routinely reducing an ammoniacal solution of silver nitrate with eugenol on all deep deciduous molar cavities and lining them with zinc phosphate cement. For a test, twenty-two teeth were given our routine clinical treatment of ammoniacal silver solution (reduced by eugenol), zinc cement base and silver amalgam filling. A year from the following fall these children were returned for examination and radiograms. But one of the twenty-two teeth had degenerated in more than a year."

Ireland[8] reported a similar study. At the College of Dentistry, Univer-

sity of Nebraska, he used approximately one hundred and fifty cases during an eighteen month period and then placed them under observation. Vitality tests and radiograms of each tooth were made before starting treatment as well as every two to four months following treatment. He reports that so far follow-up radiograms and vitality tests have revealed that the treatment has been effective in ninety-eight per cent of the cases.

The following clinical procedures were used by Ireland in this study: If the radiogram revealed that the decay had not progressed to the pulp and that there was a sound layer of dentin surrounding it, the tooth was isolated by means of a rubber dam or cotton rolls. The soft decayed material was removed, leaving undisturbed the somewhat harder discolored dentin. The cavity was thoroughly dried and ammoniacal silver nitrate then applied. The solution was allowed to remain for at least one minute, after which eugenol was removed and a cement base placed over the floor of the cavity. The silver nitrate stains on the enamel walls and margins were removed before filling.

Howe,[6] Prime,[14] Nesson,[15] Zander,[4] Baker,[16] Richards,[17] Cleary,[12] and others all recommend the use of ammoniacal silver nitrate in deep seated cavities where there has been no actual exposure of the pulp.

Ireland[18] and Easlick[11] recommend a partial pulpectomy when the operator is reasonably assured that only a small portion of the pulp is infected.

## Summary and Conclusions

An attempt has been made to review as much of the literature on the use of silver nitrate in deep cavities as possible so that the question of rationality could be answered either wholly or partially. Since the opinions of these contributors seem to favor the use of ammoniacal silver nitrate in all deep seated cavities where there is no pulp infection, the following statements are presented as a summary of the material that is presented in this paper:

1. There is a microscopic difference in the course of dental caries. In rampant caries of children, softening of the dentin usually precedes the invasion of the microorganisms.
2. The chemical process involved in the reduction of ammoniacal silver nitrate in the dentin is the coagulation of the albumin and the formation of the albuminate of silver oxide.
3. Ammoniacal silver nitrate under ordinary conditions will penetrate sound dentin only superficially.
4. Ammoniacal silver nitrate will penetrate to the base of the infected dentin, sterilize it and arrest further progress of caries.
5. Eugenol is the reducing agent of choice in deep seated cavities.
6. Ammoniacal silver nitrate should be used routinely in all deep seated cavities in primary molars and young permanent molars where there is some sound dentin separating the pulp from the infected dentin.

7. Ammoniacal silver nitrate is contra-indicated in the case of pulp exposure. Partial pulpectomy is recommended as the treatment of choice.

From this review of the literature it seems logical to conclude that ammoniacal silver nitrate is indicated in deep seated cavities in deciduous teeth.

Tennessee Department of Health.

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Nashville, Tennessee.

## NEWS AND VIEWS——

### *The President's Message*

The sixteenth annual meeting of the A.S.D.C. will be held in Boston, Massachusetts on August 23 and 24. All sessions will be held in the Hotel Vendome, official A.S.D.C. hotel. Though rumors are circulating to the effect that the A.D.A. meeting will be cancelled, preparations are still being made to hold the meeting as scheduled. If the A.D.A. meeting is cancelled, the A.S.D.C. meeting will also be cancelled.

The program for the meeting appears on the following two pages in this issue of the JOURNAL. The committee has "lined up" an unusually fine program and this year's meeting promises to be a most interesting one. The members of the Hygienists', Assistants', and Public Health Dentists' Associations will join us for the annual luncheon and remain for the afternoon program.

The symposium on Dental Economics scheduled for the afternoon session should prove to be timely, interesting and worthwhile. As one member of the committee expressed it, "It seems that in any discussion of a dental educational program public health dentists invariably run into a 'dead end' alley because they cannot get cooperation from local dentists when the children get to them. Public Health men always seem to conclude that the principal reason that the private dentist dislikes to work for child patients is his inability to get paid adequately for such work. If the men in this symposium could supply a few real answers, both private and public health dentists would be thoroughly interested."

In accordance with Article VI, Section 3 of the By-Laws, Byron W. Baily, Bradford, Vermont; Norman J. Paquette, Rumford, Maine, and Joe H. Kauffman, New City City, have been appointed as members of the Auditing Committee, and John C. Brauer, Iowa City, Iowa; Charles A. Sweet, Oakland, California, and Konrad Lux, Waco, Texas, members of the Nominating Committee. Dr. Baily will serve as chairman of the Auditing Committee and Dr. Brauer as chairman of the Nominating Committee.

Attendance at the business meeting has always been small. Won't you make a special effort to be present this year? The time, Monday, August 24, 8:30 A. M.—the place, Hotel Vendome, the Solarium. And say, why not bring a guest with you? See you in Boston.

RALPH L. IRELAND.

### *The Secretary's Message*

Through the efforts of many faithful A.S.D.C.'ers the membership status of this organization remains essentially intact in spite of the fact that Uncle Sam has called many of his "nephews" from our ranks into those of the

armed forces. The total membership at this time compares favorably with that of a year ago which, together with other events of the year, points to a most successful meeting of the A.S.D.C. in Boston.

Our dynamic president, Ralph Ireland, and his efficient committees have arranged a most worthwhile program. The essayists are all outstanding authorities in the fields which they represent. The official headquarters of the A.S.D.C. have been designated and the members of the organization are urged to attend this meeting and secure their reservations at our official hotel, the Hotel Vendome.

Special attention, Unit Delegates and Alternates! The representatives of the various State Units will please notice that the joint meeting of the delegates with the Executive Council will be held Sunday, August 23rd, Room "R," 10:30-12:00 A. M. Please be prompt.

R. M. ERWIN, JR.
613 Corbett Bldg., Portland, Ore.

## NOTICE

**The annual meeting and the program of the A.S.D.C. has been cancelled following cancellation of the scheduled Boston meeting of the A.D.A.**

***Annual Meeting of the American Society of Dentistry for Children***
***Hotel Vendome, Boston, Mass.***

Saturday, August 22nd, Room R:
2:00- 5:30 P.M.—Executive Council Meeting
Sunday, August 23rd, Room R:
9:00-11:00 A.M.—Executive Council Meeting
11:00-12:00 A.M.—Meeting of Executive Council and State Unit Delegates
Monday, August 24th, Solarium:
9:00-12:00 A.M.—A.S.D.C. and Clinic Program
Monday, August 24th, Empire Ballroom:
12:30- 2:00 P.M.—Luncheon
Monday, August 24th, Solarium:
2:00- 5:00 P.M.—Clinic Program
Tuesday, August 25th, Room R:
7:30- 9:30 A.M.—Executive Council Meeting and Breakfast

## PROGRAM
### of the
### AMERICAN SOCIETY OF DENTISTRY FOR CHILDREN

1. 8:30- 9:30—Business Meeting.
2. 9:30-10:30—Subject: THE RELATION OF DENTAL CARIES TO SYSTEMIC DISEASE.

Essayist: David Weisberger, D.M.D., M.D., Boston, Mass.
Discussion Leader: John C. Brauer, M.S., D.D.S., Iowa City, Iowa.

3. 10:30-11:30—Subject: A BALANCED DIETARY FOR CHILDREN UNDER WAR RATIONING.
Essayist: Elda Robb, Ph.D., Boston, Mass.
Discussion Leader: Mark Elliott, D.D.S., Boston, Mass.

4. 12:15- 1:45—Luncheon.
Speaker: Charles Francis Wilinski, M.A., M.D., Boston, Mass., Executive Director Beth Israel Hospital.
Subject: OUR RESPONSIBILITY IN MAINTAINING THE HEALTH OF THE NATION'S CHILDREN.

5. 2:00- 4:00—SYMPOSIUM ON DENTAL ECONOMICS.
(a) "Making Dentistry for Children Pay in a City Practice."
Essayist: Anna Mintz, D.M.D., Boston, Mass—20 minutes.
Discusser: Walter McBride, D.D.S., Detroit, Mich.—5 minutes.
Discusser: Charles Sweet, D.D.S., Oakland, Calif.—5 minutes.
(b) "Can a Small Town Practitioner Practice Profitably for Children?"
Essayist: Stanley Brown, D.D.S., Ithaca, Mich.—25 minutes.
Discusser: Maxwell Sherman, D.M.D., Hingham, Mass.—5 min.
(c) "A Dentist Participation Program Can Provide Economical and Adequate Care for Indigent Children."
Essayist: Philip W. Woods, D.D.S., M.P.H.—25 minutes.
Discusser: Florence B. Hopkins, D.M.D., M.D., Boston, Mass.—5 minutes.
(d) "A Clinical Program is the Best Method to Provide Dentistry for Children of Indigent and Low-Income Parents."
Essayist: Kenneth R. Gibson, D.D.S., Detroit, Mich.—25 minutes.
Discusser: Loren T. Hunt, D.D.S., Lincoln, Neb.—5 minutes.

## Report of the State Units

### *Nebraska*

A one week post graduate course in pedodontics was given recently at Lincoln, Nebraska. This was the second continuation short course in pedodontics made available to the dental profession by the cooperative efforts of the college of dentistry, the University of Nebraska, and the Nebraska State Department of Health, Division of Dental Hygiene.

The class was limited to fifteen dentists under the direction of Ralph L. Ireland, B.S., D.D.S., Professor of Pedodontics, Chairman of the Department.

### *New York*

The Annual Meeting of the New York State Society of Dentistry for Children was held Friday, May 15th, 1942, at the Hotel Pennsylvania, Seventh Avenue, at West 33rd Street, New York City, at 12:30 P. M.

An elaborate program was prepared to entertain the out-of-town mem-

bers attending the State Convention. The Second District Dental Society's Section on Dentistry for Children acted as hosts.

THE PROGRAM

1. Luncheon at 12:30 honored the guest speaker
   Dr. Jack M. Wisan, Dental Consultant, New Jersey State Department of Health, President-elect, American Society of Dentistry for Children.
2. Election and Installation of Officers (1942-1943).
3. A trip to the Guggenheim Dental Clinic and School for Dental Hygienists. A splendid opportunity was provided to see actual cavity preparation, pulpotomy, root therapy and other operations on young children. A short lecture preceded the tour of inspection. At about 2:00 P. M. Dr. John Oppie McCall, Director, discussed "Dental Diseases in Children's Mouths."

Members of the Dental Society of the State of New York were cordially invited to join this organization in its drive to SAFEGUARD THE SMILE AND HEALTH OF AMERICAN YOUTH.

AARON APFEL, President.
ROBERT M. GALBRAITH, Vice-President.

A joint program on Dentistry for Children was given by the Texas Society of Dentistry for Children and Texas Society of Orthodontists. All members of the Texas State Dental Society were cordially invited to attend.

The program included papers on "Methods and Procedures for Early Recognition of Malocclusion" by E. B. Arnold, Houston; "Bleaching Mottled Enamel" by Harold B. Younger, Dallas; "Extraction in Treatment of Malocclusion" by W. B. Stevenson; "Children's Dentistry, Our Neglected Responsibility" by John F. Prichard, Ft. Worth, and "Practical Methods of Handling Children" by Guy Gillespie, Abilene.

A business session and the election of new officers followed.

DAVE BLONSTEIN, President.
J. B. PEABODY, Secretary.

## Development of Local Units the Ultimate Goal of A. S. D. C.

*By* John Oppie McCall, D.D.S.

Those members and guests who attend the annual meetings of the A.S. D.C. are invariably impressed with their value from the scientific standpoint, their effective presentation of new ideas in technics and their general stimulating effect. This reception is a tribute to the officers and the committees concerned. Consideration of these facts, satisfying though they are, should, however, point out something more. Too few of the members of

organized dentistry profit by the advances in pedodontics for which the A.S.D.C. is so largely responsible and which are summarized in the annual meetings of the Society.

The real objective of the Society is the promotion of dentistry for children. I think that this objective is best accomplished in terms of personal contacts in small groups of dentists. A section of a city society, formed around a nucleus of members of the A.S.D.C., provides opportunity for the sort of thing that I have in mind. There are other ways, as well, the method depending on the local conditions. However the objective is accomplished, it should either start with or lead to the formation of local units of the A.S.D.C.

I am satisfied that a large number of men in the profession want and need clinics, if they cannot get refresher courses in the technics of dentistry for children. The local unit may either provide or make arrangements for such instruction.

So far the state units of A.S.D.C. which have been, with few exceptions, the ultimate in the development of constituent societies, have failed to meet effectively the needs that I have mentioned. This failure does not lead to a denial that the state unit has a function, but I do think it fails to bring pedodontics to the rank and file of the dental profession. I should like to see a purposeful and country-wide development of local units or chapters of the A.S.D.C. on a city or county basis. Meetings need not be frequent and hence should not detract from other dental meetings. When they are held they should be helpful in terms of the practical and constructive in the future improvement of the dental health of American children.

422 East 72nd St., New York, N. Y.

## Foundation Teeth: Reply to a Report

Joseph H. Kauffmann, D.D.S.

In the Second Quarter 1942 issue of the Journal of Dentistry for Children, there appears Part II of the Report of the College Committee of the American Society of Dentistry for Children, rendered at Houston, October 26, 1941. It is entitled, Dentistry for Children—Its Nomenclature. I am particularly concerned with that portion of the Report dealing with various names for the first dentition; and I am specifically interested in the Committee's statements pertaining to the inadvisability of adopting the name foundation teeth for use by the public. May I say at the outset that I appreciate the sincerity and devotion of the Committee members whose findings are published and I recognize their right to state their views as they have conscientiously given them. However, in my humble opinion, their negative position on the use of the name, foundation teeth, is unfortunate. Of course, there is nothing in their Report which seeks to deny anyone the

privilege of offering dissenting views and I make bold to state as respectfully as possible why I think the Committee is in error.

The Report states on page 56, that in the case of the expressions temporary teeth and baby teeth, each "is a term readily understood by lay people, but one which controverts the dentist's best efforts to teach the value of a regular program for the preservation of the first dentition." It continues: "Foundation, which has been suggested to meet such an objection, is something of a misnomer, since the 20 teeth in the first dentition cannot possibly serve as foundations for all of the teeth in the second dentition, while a foundation may be a base for a building or a charitable institution to lay people." Then follows: "In view of the preceding discussion, the term, primary, is suggested for the first dentition as a term which may be acceptable to the dental profession, significant in its meaning, with no connotation of impermanence and readily understood by lay people." The paragraph closes: "If the use of the term primary appears too difficult to popularize with the dental profession, further search for a term that will be satisfactory both to dental health educators and general practitioners will be necessary. In the meantime the use of deciduous, with the explanation, first, may be recommended to dental health educators. The term, primary, will be used in the official publications of the American Society of Dentistry for Children."

Let me quote from my original editorial in The Midtown Dental Society Bulletin, March, 1938, when I first offered the name, foundation teeth, to the dental profession: "The proposed name, foundation teeth, stimulates the thought of what is to follow if the groundwork is sound. In plain words, a good first set leads to a good second set of teeth." Toward the conclusion of the editorial I wrote: "The word foundation conveys an emphatic impact to the ear and mind because of the thought of substantiality which it arouses. This is better appreciated if one will repeat the word a few times by speaking it aloud in a distinct manner. The reaction to its use is like that evoked by a person of character; it gives one a feeling of something worthwhile. Being new, it will serve as a stimulus to the inquiring mind as to what it is all about; being easily explainable in reference to the relation of the deciduous dentition to the permanent successors, its message will be readily absorbed; finally, the educational objective of its use will be achieved when the young child receives the benefits of dental care during pre-school years."

Referring back to the Report: I have never claimed that the 20 teeth in the first dentition would serve as complete foundations for the greater number of 32 teeth in the second dentition. But I do contend that the emphasis placed upon the 20 teeth as a whole by the use of the term foundation teeth will certainly have more of a constructive effect on the mental picture of the layman than any other name now in use. Even if foundations for only 20 of the succeeding 32 teeth, that alone would make the use of the name worthwhile. We are concerned with the 20 teeth of the first dentition which are

present and not academically worried about the 12 which are not.

Further, the Report offers the following objection to the term foundation teeth by stating that "a foundation may be a base for a building of a charitable institution to lay people." Well then, by the same token would it not be just as far-fetched and illogical for me to object to the use of the term primary teeth on the grounds that the latter might convey to a layman the thought of a primary reader or a primary election. As a matter of fact, I have yet to find one professional colleague of the increasingly many now using the name foundation teeth, to report even one instance in which a mother mistook the term to mean the bottom of a building, a modern corset or an orphan asylum.

I note with interest that the terms "deciduous, with the explanation, first, may be recommended to dental health educators" in the meantime until primary is more widely adopted. I leave this question with the average member of the A.S.D.C., "Which do you think means most to a layman in emphasizing the importance of the first dentition, foundation or deciduous foundation or primary?" "When talking to a mother, would you prefer deciduous or primary because of their literal scientific exactitude or would you prefer the word foundation with its practical psychological impact in getting home a message?" "Suppose you were not a dentist, which of the three words do you think would create the most meaningful impression on your mind as a parent interested in his child's teeth?"

Usage of a word or name or phrase is what makes the decision as to its permanent place in any vocabulary. Neither my personal approval nor the disapproval of the Committee will be the deciding factor. Permit me to say in this relationship that since 1938, members of the dental and medical professions in our country, Australia, England and South America have been using the term foundation teeth in written contributions to the literature. Incidentally, two of this country's leading lay publications, Hygeia and Parents' Magazine, have carried articles by me on foundation teeth. My desire to avoid asking for too much space in the Journal prompts me to withhold other substantial evidence of the growing favor with which foundation teeth is meeting. I want to say that I have in no way put aside or discounted any of the opposition to the name foundation teeth. There is no reason why I should, because it will successfully withstand every adverse criticism that has yet been offered by those who do not like it—at least, until something better is proposed.

May I state in conclusion that it is ironical to find that the very organization, the only one of its kind in the United States, which ought to give its official approval to a worthy proposal having a most unselfish motive behind it, has seen fit, at least in a negative way, to decline its support. But time will tell and I am confident that within the next ten to twenty years the name foundation teeth will be intrenched in the public mind universally.

27 East 95th Street,
New York, N. Y.

# CONTRACT DENTISTRY

Walter C. McBride, D.D.S., Detroit, Michigan

For a long time I've wanted to air the matter of contract dentistry for children and, to learn as well just what other operators are doing. So, here 'tis. Will those who take the trouble to read these pages write to me or the editor narrating the reactions they've had in the pursuance of this plan—the same to be published in a later issue? Do so. It will be helpful to all. Write in detail your treatment of this subject, with its merits and shortcoming as you've found them.

Contract dentistry appears to be of orthodontic origin. The orthodontists believed originally that fees should be based on a monthly or yearly basis. The pedodontist, when he came along, evidently casting an envious eye on the luxurious life common to his orthodontic friends, inquired of himself, "Why not care for children on a similar basis?" And so a new departure in fee setting was born. Obstetricians today commonly exact an over-all fee for pregnancy and delivery, and many pediatricians stipulate a flat yearly fee for pediatric care during the first year of the new born. Further, it's the clever Chinese, I think, who pay their physician to keep them well. For both the operator and the payee this plan in dentistry for the child has many fine advantages, and as well, some disadvantages.

The writer was only lukewarm on the idea until a few years back when Charles Sweet, salesman that he is, and a good one, waxed enthusiastic about how it operated for him. He had been caring for a number of children in an orphanage at an hourly rate and deduced therefrom that the plan could be converted to use for private practice. So, he began. He has altered his original practice plan considerably but so far as is known he still utilizes it.

Encouraged by Dr. Sweet's enthusiasm and biased by his business acumen, I began the paper planning incident to its incorporation into my practice. I had long since learned that a pedodontist could ably care for 1,200 children, and having that number and a few to boot, began some calculus and mental gymnastics as follows: 1,200 patients; $25.00 per year each; $30,000.00 gross income; could provide ideal dentistry without parental questioning regarding treatment, x-rays or anesthetics; vacations no longer costly because of the yearly fee; hereafter, orthodontist-like, I could enjoy the trout-fishing season, the deer-hunting season, the pheasant season, the national meetings, as well as the regular vacations with the family, without interruption of the income. Utopia thought I, and I couldn't wait until tomorrow to begin.

A folder of explanation was at once prepared, to be given out to new patients, and to the old on their periodic return. But a wise counsellor said, "put nothing in writing, lest the advice and opinions of family dentists and dental friends be sought and the idea be discredited by the unscrupulous few—or perhaps the patient, by the lure of a reduced fee be lost by con-

scription." I said, "dentists were not like that," to which he avered, "could be." So, the idea was initiated with verbal presentation, which proved to be far too time-consuming. Briefly it stipulated all dental needs except regulating and spacing appliances, three prophylaxes per year, together with all operative needs and emergency service. A ten year service, four to fourteen.

It was early learned that $25.00 per year was too high to interest all possible takers and so the utopian paper gross of $30,000.00 had not only to be sliced but materially whittled. Another fact soon encountered was that people were not generally interested in buying this type of insurance, they more or less had to be sold. To abbreviate a long story perhaps fifty children only were placed on this yearly fee plan.

The working arrangement with these children was ideal for me. I could proceed unhampered and without questions as I saw fit. The compensation came in semi-annual installments and promptly. Today however, I have only two patients, on this basis, both of the same family, and when they become of age the idea will have terminated. To me the disqualifying blows have been. (1) The promiscuous time consumption of those patients who take the liberty of coming in unheralded or calling for appointments promiscuously, two and three times as frequently as when on the regular fee basis. These parents arrogantly feeling that they are paying for this service appear to have no qualms about disturbing a tight schedule of appointments for me, or discommoding the patients who have those appointments. (2) The reneging in families of 2 or 3 children of which one child may have few dental needs and the others many. The child with the good teeth will be withdrawn from the agreement while those with greater needs will be retained. If you please, I'm not censoring the parent for this procedure which curtails his financial outgo but I maintain specifically that it disturbs the effectiveness of my planning which is based on the law of averages. It definitely nullified the idea for me because after a time only those with the greater dental needs remained.

I know a dentist who feels that he has solved the latter problem by having a sliding scale fee for children of varying dental needs. His yearly fee is based on his ability to guess at the initial appointment the future dental requirements of the child. I am familiar also with a plan in adult dentistry in which the fee is $25.00 per year plus laboratory and material costs. This dentist writes a contract on a five year basis with renewal privileges. His first task is to immediately restore the mouth and then, to use his term, "coast the remainder of the contract with only the regular prophylaxis and the intermittent small filling." There are so many possibilities in adult dentistry one couldn't make a worthy appraisal of it without some experience.

Now how about you? What has been your experience? This isn't a one-sided Beatrice Fairfax presentation endeavoring to solve your problems but an open forum which invites your contribution. Let's hear from you.

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